J. S. MACKAY

JOHN STURGEON MACKAY was born on the 22nd of October, 1843, at Auchencairn, near Kirkcudbright, where his father, in the course of business, resided a short time, but it was in Perth that he spent his boyhood. In the Academy there he received a thorough grounding in English, Latin, Greek and Mathematics, and when in 1859 he matriculated at St. Andrews University, he was able to take full advantage of all the opportunities the University offered. While an undergraduate he read very widely in Greek and Latin literature, and had the reputation of being one of the finest classical scholars of an unusually brilliant year. At a later period he acquired a sound knowledge of French, German and Italian, his command of French, whether colloquial or literary, being exceptionally good. He completed his course and passed all the examinations for the degree of M.A. in 1863 (though he did not graduate till 1865), and in the same year he returned to his old school as Rector's assistant, remaining there till 1866, when he joined the staff of the Edinburgh Academy. In this well-known school he spent the rest of his working life, holding for the greater part of that period the position of head mathematical master.

During the early years of his residence in Edinburgh he devoted a considerable part of his leisure to the study of botany and geology, and he never lost his interest in these subjects.

Dr. Mackay's training was thus unusually broad, and when, as in his case, a liberal education was associated with a genial, upright and sympathetic nature, it is easy to understand why he was so successful as a teacher and gained both the respect and the affection of his pupils. Many of these attained distinction in various fields at home and abroad, and many proofs have been given of the deep affection they cherished for their old master; no furlough was complete that did not include a visit to the well-known room in Northumberland Street.

From his University days geometry was Dr. Mackay's favourite mathematical study; at an early date he began a careful reading of the Greek geometers in the original tongue, and as the years passed by he acquired a quite unusual familiarity with the whole range of Euclidean geometry. In the course of his researches he was led to give special attention to Pappus, and it is a matter for regret that the appearance of Hultsch's edition induced him to abandon his intention of editing the *Collections.*

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It is not possible to enter here on an analysis of his contributions to the history of geometry; most of these are contained in the *Proceedings of the Edinburgh Mathematical Society*, but attention may be called to his article, *Notice sur le Journalisme mathématique en Angleterre*, contributed to the French Association for the Advancement of Science (Congrès de Besançon—1893)—an exceedingly valuable guide to one aspect of English mathematical history

In 1884 appeared his *Elements of Eucild*; the book had a very wide circulation, and contained many novel features that were soon more or less successfully adopted by other editors.   Dr Mackay was, to say the least, not an enthusiastic supporter of the Perry movement in its bearing on the teaching of geometry; he always contended that the valuable parts of the new methods had been adopted in the better Scotch schools, and he maintained that a standard order of propositions was a practical, though not a theoretical, necessity   His *Plane Geometry*, which appeared in 1905, was adapted to the newer programmes; though he had not, I think, the same interest in preparing this later text-book, it is nevertheless a sterling piece of work, such as could only have been written by one who was master of the subject.

Other text-books from his pen are *Arithmetical Exercises* (1869) and *Arithmetic* (1899); he also contributed several articles to Chambers's *Encylopaedia* and to the *Encyclopaedia Britannica*.

Dr. Mackay was a member of the A.I.G.T from its origin, and took a warm interest in its work.

He was one of the founders of the Edinburgh Mathematical Society, was its first President, and was for years a leading contributor to its *Proceedings*.   He served for more than one period on the Council of the Royal Society of Edinburgh, and his services were of special value as a member of its Library Committee.   For many years he spent the greater part of his summer holiday on the continent, and he was a well-known figure at the meetings of the French Association for the Advancement of Science.   His great linguistic attainments were of much service to the Permanent International Commission for Mathematical Bibliography, of which he was a member   He also took a keen interest in the Franco-Scottish Society, and was a member both of the Council and of the Executive.

Dr. Mackay's great learning was fittingly recognised by his old University when, in 1887, it conferred on him the honorary degree of LL.D.

In 1904 he retired from active work, but he had no difficulty in finding congenial occupation; he devoted himself to his favourite studies, and was ever ready to place his great knowledge at the disposal of his friends. Until three months ago he enjoyed fairly good health, but early this year a change for the worse took place, and he passed away on the afternoon of Wednesday, 25th March.

Few men in Scotland have had a stronger influence on the development of mathematics in the secondary schools. None has equalled him in the special branch of historical learning which he made peculiarly his own, and his loss is mourned by a wide circle of pupils and friends.

G. A. Gibson.

DESARGUES' THEOREM.

In his *Foundations of Geometry*, Hilbert has shown " the impossibility of demonstrating Desargues' Theorem for plane geometry without the help of the axioms of congruence."   But it must be remembered that his demonstration depends entirely on the form which he has given to the other